Special Issue

Magnetic and Spin Devices, 3rd Edition

Message from the Guest Editor

As the scaling of electronic semiconductor devices results in saturation, the main research focus is the search for computing paradigms which employ new physics principles. Electron spinning, the intrinsic angular momentum of an electron, offers additional functionality to electron charge-based microelectronic devices. Electron spinning is characterized by two well-defined projections on a given axis and is, therefore, perfectly suited for digital data processing. Several fundamental problems, including spin injection, spin propagation, and relaxation, have successfully been resolved to produce spin-based reprogrammable semiconductor devices. Ferromagnetic electrodes are employed to produce and inject spin-polarized currents. Devices employing magnetic contacts are non-volatile as they can preserve the information stored in the magnetization orientation without consuming external power. This Special Issue focuses on all topics related to spintronic devices, such as spin-based switches, magnetoresistive memories, energy-harvesting devices, and sensors, which can be employed in in-memory computing concepts as well as the artificial intelligence of things paradigm.

Guest Editor

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Editor-in-Chief

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